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COVER: Black Ducks by Steve Elliott
Richmond, Virginia

Editorial

"ENERGY AND ENERGY RESOURCES"

The 1977 Fontana Conservation Roundup marked a milestone in the eighteen year history of the organization. In pursuing the topic, "Energy and Energy Resource Conservation: Obstacles and Opportunities," some outstanding speakers from industry, the federal government, and the consumer movement presented their ideas. As a result of their diligent efforts, the group prepared a summary of recommendations and suggestions which point towards solutions for our nation's energy supply and conservation challenges:

"While energy is a national problem, it is very much a personal one. Education and credible communication are two of the most pressing needs in resolving the energy crisis.

Americans do not believe there is a problem. They hear from many sources and most do not understand or trust what they hear.

Unless the people believe there is a threat; unless the people are willing to make the necessary sacrifices because there is a threat; no program to eliminate or avoid shortages will ever work.

A national energy policy must include: a responsible assessment of supply and demand projections; a program of research to seek more alternative sources of energy and improve methods of conservation; provisions for regulation, as necessary, to protect the economic health and national security of our country; a program of energy conservation; and an aggressive education effort.

The government should consider mandatory restrictions and penalities to halt unwise energy use.

The country must question the measurement, means and necessity (and desirability) of continued national economic growth. Unlimited growth does not necessarily equate with better national health or quality of life. It is not necessary to this nation to improve or even maintain its present high standard of living. Both the environmental and economic costs are too high. But, there may be times when the environmental approach must yield to the greater demands of energy.

The U.S. should reduce its dependence on imported energy. The following alternatives to oil and gas energy should receive increased national attention research, demonstration, and promotion; tidal power, coal use, solar energy, fusion, ocean current, thermal gradient flow in oceans, wind, biomass conversion, cogeneration (productive use of now wasted energy.)

Conservation is not the single means to work out the energy problem, but conservation of energy is essential. Instead of emphasis on the growth needed to meet energy demands, emphasis should be on ways to reduce the "need" rather than on seeking to meet it without question."—H.L.G.

Letters

MAGGIE VALLEY MEMORIES

I suspect that everyone suffers a bit of homesickness when they move from their native state. My wife and I left Virginia at the end of last summer and moved to Missouri, where I am employed. Only someone who has hunted in Craig County could fully appreciate the article on Maggie Valley which appeared in the November issue. I have spent some of my most pleasant hours in that area and took an 8-point buck near there in 1974. I know at least one person who eagerly travels almost 1,000 miles to hunt deer on the ridges at the valley's edge. It wasn't the author's intent, but he surely stirred some haunting memories in at least one reader.

Robert D. Hall
Columbia, Missouri

HOME BREEDING?

Seeing as the Virginia Game Commission is the representative for migratory birds, wild birds, and other types, I decided that it would be best to seek some information that I require from you. I live in a rather wooded and secluded area; there are many types of wildlife in this area. Recently a red pileated woodpecker hit one of my windows and broke its neck thus causing it to die. Other than him I know of one other—his mate I believe. Both were very large and have been in this area for several years. I am aware of the fact that this species of woodpeckers is becoming very rare. Seeing as I am a firm believer that this bird should not become extinct, I was very concerned as to where I could either purchase or somehow get about eight of this species (four male, four female). I would greatly appreciate any information at all that you might have.

Charles White
Martinsville

We are quite sure that you will not be able to purchase woodpeckers of any kind for introduction into your woods. If there is proper habitat for pileated woodpeckers in your area the chances are that you will have another pair nesting in your woods soon.

—Assoc. Ed.

A DISSENTING OPINION

It is admittedly difficult to make sense when one is enraged such as I am upon reading your article entitled "Off-Beat Hunting" (*Virginia Wildlife*, August, 1977) but, nevertheless, I shall try.

I abhore hunting, or rather, its practitioners. Hunting is theoretically quite sound and practical when speaking of obtaining food, controlling populations, etc., but I cannot help feeling that, when coming from the sportsman hunter, this is all that these reasons really are. . .rationalizations.

What gives these "sportsmen" hunters their big kick? Is it pride in marksmanship as illustrated in your "Off-Beat" friends, I can only speculate when I say that it is first degree bloodlust or some equally sadistic psychological malady that compells you "sportsmen" hunters to rationalize the stuffed bobcat up on your living room wall.

FJG
Midlothian

After He's Gone...

By BILL TREADWELL

The return of fall brings excitement to the hearts and minds of many Virginia hunters and their "favorite" hunting companion, their bird dog. Whether with a retriever, pointer or springer, taking to the fields and woods with a dog heightens the anticipation of finding game. A bird dog is an ingredient that adds flavor to the sport of hunting. The dog does not necessarily have to come from a "high priced" finishing school or to have been bred from a famous bloodline to "make the hunt." Obtaining a good bird dog mainly depends on the hunter's needs

and wants along with his life style and his pocketbook.

For some hunters, a dog is strictly for putting game in the bag, but many others find satisfaction in just watching the "ole" fella work; or just the pleasure of giving their pet the freedom to romp and explore nature with them. Hunters can offer many reasons for hunting. They will argue about the type of gun and shot-load to use on small game, or what kind of dog works best on upland birds.

But to this same hunter when asked about why he uses a bird dog, "the beauty of watching 'ole' Hoss find birds," is the reply. The true sportsman will not deny the enjoyment he receives from watching his dog locate game. Viewing a dog work the golden corn fields, the rich autumn hillsides or snow- covered leafless forests is like observing an artist add the finishing touches to his interpretation of nature's outdoor wonders.

I guess you appreciate your dog the most when you wake up one morning to find him missing from his kennel. Once I spent a wonderful Christmas Day with my wife, and as darkness started to cover the sky, I took my dog out for his "evening run." For a working man, this is about the only time during the week we can exercise together. Putting him in the kennel to finish our dinner leftovers, I bade the "ole" boy good night as always and went into the house.

After a restful sleep and morning breakfast, I looked out the window for my reassuring security check on the dog. To my unexpecting eyes, both he and his chain were gone. This was not the first time that by some accident he had found his way loose to take an unaccompanied tour of the neighborhood. More out of anger than alarm, I made a quick check of his favorite roaming spots, but to no avail. Pressed for time to be at my job, I had to abandon the search in hopes he would come back home sometime during the day.

Needless to say, the day was long as I anticipated resuming my search. I left work early to take advantage of the few remaining minutes of daylight. My arrival home was a bit faster than normal. I nervously walked out to his kennel hoping to find a hungry and excited dog. Hoss was still gone.

There was no sign of his having returned. I called, whistled and drove around the neighborhood looking for him. It was now dark and his feeding time. Still no sign of that now "beautiful" orange- and-white face. Entering the house with a feeling of worry and disgust, I forced myself to sit down and eat dinner.

I skipped dessert to go out into the cold night in search once again still no luck. Half frozen and with wet feet, I restlessly settled down in the living room to thaw and watch television, while keeping one watchful eye out the window for my dog.

After a sleepless night, I went to the kennel to see if my long-lost friend had returned. His carpet-covered bed was still empty. The situation stayed the same for the next four days. My wife began to find me a little hard to live with. My office work seemed to make little progress.

Repeatedly my mind would wander over the worst possible things that could have happened to him. Had someone walked right into my yard and taken him? Had his chain caught on an object and prevented him from returning? Had a car been unable to avoid hitting him? I even began to feel sorry about the times I had to discipline him.

I placed advertisements with the radio stations and in the newspaper. I continued to search the area, producing unsatisfactory results. As time slowly passed, I thought about the good times we had on our hunts, the birds we had found and the admiration Hoss had received from fellow hunters. The thought of why I did not take more security measures on his enclosure kept haunting me.

The toughest part of the ordeal was on Saturday morning, my one day in the week to hunt. I had to go it alone for the first time in two hunting seasons. I almost had to force myself to go, even though hunting is like a second wife to me. Locating a few scattered birds and experiencing the usual missed shots did not seem to excite me. I found myself leaving the woods earlier than usual, a real surprise to my waiting wife.

The following day, Sunday, during the middle of a televised football game, I happened to look out the window to see a brown-and-white flash streak by the fence. With my hopes almost diminished, I perked up from the chair to look again. Through the weave in the fence I glimpsed what was a familiar sight.

"Hoss, He's home!" I shouted. I do not recall scrambling out of the chair or opening the back door. I suddenly found myself exuberantly embracing an old friend with a new kind of love. At last Hoss was home. The next several hours were spent in celebration. I did not ask him where he had been, but I sure wish he could have told me.

What a lesson I learned about relationships. Hoss now receives the "red carpet" treatment in our house. And I have since taken the necessary security steps to protect one of my most treasured possessions.

Some days later, my wife expressed her feelings about having Hoss return safely. But the nice thing for her was having her husband back home again, too.

WILD FOREVER

BY ROGER STREITMATTER

"Most men, even in this comparatively free country, through mere ignorance and mistake, are occupied with the factitious cares and superflously coarse labors of life that its finer fruits cannot be plucked by them."

Henry David Thoreau wrote those words more than a century ago, but they could have come from the firm, square jaw of a mild-mannered Montgomery County naturalist who insured that the land he loves will live after him.

As he stands in the moss at the base of his magnificent waterfall; as the untamed water crashes against 80 feet of limestone; as his Labrador retriever and border collie romp among the foliate; and as 500 acres of pristine forest surround him, there is no doubt Bill Bradley has found life's "finer fruits."

Bradley, nearing 70, detected a problem when he peered into the future seeing what might befall his patch of paradise when mortality prevented him from protecting it against "imaginative" developers who envision asphalt lots and dollar signs.

With the confidence which allowed him to attain his dream, Bradley found a solution to the problem, The Nature Conservancy. Its roots extend back to 1917 and the Ecological Society of America, and today it searches for a sparse selection of what its members like to call"the last of the best." Bradley's fine fruits fit the bill for the tender care of the Conservancy, and, likewise, it was the answer to Bradley's dilemma.

"It was exactly the kind of organization I was looking for," Bradley said. "Anything else would have forced all my efforts and all my wishes down the drain." Those efforts included casting aside material possessions collected during a life that society would equate with success.

Wearing a wool plaid jacket over his flannel shirt, the large man has learned to speak--and to live--slowly and deliberately. His words came tenderly, almost reverently, when asked to explain his gift to The Nature Conservancy.

"I did it because I think this land is a beautiful place, and I love it. I want it always to remain the way it is today." Like a naturalist's walk through the woods, the message is not hurried. Each word is chosen carefully and artfully, as an artist chooses the colors to create a scene on canvas.

"I love this land, every tree and flower on it, and I couldn't stand the thought of its being developed with lots and cabins and such.

"I wanted, and want, it to remain forever in its present beautiful state, as a sanctuary for wildlife and all the things that grow here. In the hands of The Nature Conservancy, I think that will happen.

"People tell me I'm sitting on top of a gold mine," Bill Bradley mused while looking over his hills and hollows. "But I have enough money to live on--and what else does a person need?"

Bradley, who received a degree in agronomy from Virginia Tech, began his back-to-nature Walden-ish life after a fast-paced career as a photographer and publicist ending with a 13-year stint in the information section of Virginia Tech's extension division. Today, he does not own a camera.

The miraculous change in Bradley's lifestyle came when a friend asked him to tag along on a visit to rural acreage near the Fagg community of Montgomery County. The acreage was for sale.

"The minute I set foot on the property--walked around a little bit, saw the waterfall--I said, 'Hell, yes, I want it!"

About 50 of the 700 members of the Virginia Chapter of the Conservancy learned why Bradley made his quick decision when they visited Falls Ridge in October to end their annual conference at Mountain Lake resort amidst the Alleghany Mountains of nearby Giles County.

Students rent the farmhouse at the base of Bradley's mountain, and another student and his wife occupy one of the boxlike buildings connected by a deck atop the rugged incline. Bradley lives in the second half of the building which was constructed with an ultimate use as a preserve sanctuary in mind.

The owner's half of the prefabricated dwelling is decorated with a unique blend of abstract paintings by local artists and elegant antiques from the Bradley family estate near Charlottesville.

"I'll live here until they plant me," Bradley said casually with a whimsical twinkle in his blue eyes, "but even then I'll know my land is taken care of."

When he wants, Bradley still has his passport to travel in"sophisticated" Virginia Tech and Blacksburg circles, but he is one of the limited number of persons who is also welcomed with a handshake into potluck suppers and Acre Sales of the rural corners of the county.

"At first they resented the new egghead from Tech," Bradley said of his neighbors, "but gradually they've gotten to know me."

Bradley is active in the Ellett Valley Civic Organization, an ambitious group of individuals-- mostly farmers and laborers--dedicated to keeping their small valley clean. The county has a stockpile of trophies, ribbons, plaques, and certificates from Keep Virginia Beautiful and Keep America Beautiful. Bradley pulls his weight in the beautification effort.

Falls Ridge is an official preserve and Bradley welcomes a near-constant stream of flower club members, scouts, botanists, bird watchers, scientists and fellow naturalists to the lush forest.

Some of the most curious specimens are, of course, the permanent residents of the woods. Of special interest are wild cats, ravens, great-horned owls, red-tailed hawks, red-shouldered hawks and pileated woodpeckers. A few deer also wander the woods which are thick with turkeys, squirrels, opossums, raccoons, skunks, grouse, chipmunks, rabbits, groundhogs, pack rats and an endless variety of birds.

A few 200-year old trees are sprinkled in the thick forest which has revegetated the hills since extensive lumbering occurred in the 1920's. Evidence of three small sawmills and decaying piles of sawdust remain on the property from the days when owner Harry C. Dudley operated his business on the land.

The Dudley's owned the property during the War Between the States. Largely a professional and certainly an enterprising family, they operated a grain mill, carding mill, log dam and limestone kiln.

Vegetation in the area has remained diverse, explainable in part by the Salem Fault which runs through the preserve and divides the Precambrian limestone from shale and limestone deposits.

Bradley's Falls Ridge home sits among scenic mountains

The fault extends down Bradley's driveway, and his mountain-top home is directly on the fault line. There is no major concern, however, because the fault is not likely to move. .

Vegetation from the sale soils ranges from wild pink azaleas to evergreen bushes, mountain laurel to trailing arbutus, rhododendron to dogwood. Limestone vegetation includes red bud, hepatica and some dogwood.

Although the tree population today is varied, it is typical--but not actually common--Eastern deciduous forest. Uplands are covered with oaks, hickories, ashes, white pines, Virginia pines and scrub pines such as pitch. Tulip poplars and Carolina hemlocks are prominent in ravines and hollows. Sycamores are predominant near streams, although many varieties--including an abundance of American hornbeans and a few walnuts and yellow buckeyes--are in lower lands.

Making it available for scientific research, the area's proximity to Virginia Tech is considered a plus for the Falls Ridge preserve.

"Technically, it is not virgin land, but with no roads and Bill's efforts to keep the land undisturbed , it's perfect for research," said Keith A. Argow, a Tech associate professor who doubled as vice chairman of the Virginia group of The Nature Conservancy last year.

The "piece de resistance" for the pristine paradise, the spectacular waterfall defies description by mere words. Awesome, breath-taking, collossal, dramatic, exhilarating, ferocious, gorgeous, horrendous, idyllic--all are correct but insufficient.

In addition to its aesthetic beauty, the waterfall is unique because the cascading water is causing rock beneath to extend outward rather than to erode inward, Argow noted. The phenomenon is created by the high limestone content of the water rushing over the rocks, and the entire area affected by the waterflow is an excellent example of traverstine build-up.

But the most outstanding general characteristic of Falls Ridge, Argow said, is retention of the natural environment and ecosystem which has been preserved by Bradley's never-wavering dedication. Resolutely opposed to altering the natural setting by so much as planting a non-native flower at Falls Ridge, Bradley confines his gardening to a greenhouse near his residence.

"Bill is the kind of guy we're always looking for," said Argow, the unpaid Conservancy official. "He loves his land and doesn't want it destroyed."

Reticent, modest and profoundly tranquil, Bradley spends most of his days wandering the woods he knows. But he still yearns to know those woods better still. When sincerely interested visitors knock at his door, Bradley shares his serenity with them. He offers a cold gin and tonic, tasting all the better with warm conversation.

During one recent interview, Bradley sipped and thought for several moments--perhaps minutes-- before finding exactly the correct verb to describe his favorite activity: Ambling.

"It takes me half a day to walk 300 yards, there's so much to see," Bill Bradley said with a contented smile.

Scenes like this abound on Bill Bradley's beautiful domain.

EXOTICS:
A Risky Business

By PATRICK F. SCANLON

Introduced species are those which were not originally part of the native fauna. They are also referred to as exotic species. By and large, introduced species in this country were brought here by man. Their release to the wild may have been planned or inadvertant. Some species, however, have managed to introduce themselves without any assistance from man. A further aspect of introduced species is the relocation of native North American species to areas other than their native range.

There are many reasons why animals are imported. Man has imported domestic animals for livestock production and for keeping as companion animals. Animals have been imported for stocking as game species or as sport fishes. Many species of birds and fishes are imported for sale as pets. Animals, especially primates, are needed for research purposes and are imported in substantial numbers. Some species are imported for display in zoos. In the last century, several non-game species were introduced by individuals or groups for what was probably personal esthetic reasons. Lastly, some species were introduced inadvertently or were successful in introducing themselves.

Problems frequently result from introduced species when they escape into the wild and become established. The problems are varied and include severe ecological problems as well as the fact that many introduced species are major pests. Ecological problems include competition with native species for food and nesting sites.

Members of almost all domestic mammal species imported for livestock production exist today in a feral condition in some part of the United States. Examples of problems caused by feral domesticated animals are competition between burros and desert bighorn sheep in the Southwest, and the adverse ecological effects of introduced goats on the Hawaiian flora. Additionally, wild horses in parts of the west pose formidable range management problems and feral dogs in many cities are public health problems.

Many species have become established following stocking, though not all stockings of game species have been successful in establishing huntable populations. Those game bird species which have become established have contributed substantially to hunting and have not been pests of significance. There has been much less emphasis on stocking of non-native game mammals.

Species of fish imported for the aquarium trade may be potential sources of problems. Improper disposal of fish from aquaria may have been sources of established populations. Additionally, escapees from breeding facilities have also contributed to establishment of exotics. Florida has some of the worst problems in the country at present and recent reports indicate that 32 species of fish or hybrids have become established in the fresh and brackish waters of Florida.

The major pest species in this country include many species which were introduced. Norway rats, black rats, house mice, European starlings, rock doves, i.e. pigeons, and house sparrows are all major pests. The exact history of the importation of many of these species is not fully known but black rats were believed to have been introduced by the Early Spanish voyageurs when they escaped from ships. Rock doves were probably introduced by early settlers and probably were domesticated birds at that point in time. European starlings and house sparrows were introduced towards the end of the last century in the New York area. Both have spread all over the country and are recognized as major pests.

The challenge for the future is to provide appropriate management for already established introduced species and to prevent the establishment of newly introduced species. Among terrestrial vertebrates probably the greatest potential problems are cage birds. It is conceivable that many species of cage birds might become established if sufficient numbers of these species manage to escape. Problems will be readily prevented if shippers, retailers and pet owners understand the full implications of escape and take adequate precautions. Additionally, owners should dispose of unwanted pets properly and not simply turn them loose.

Nancy Kessinger puts the finishing touches on a muskrat pelt.

NANCY KESSINGER, TRAPPER

By CHARLES D. BAYS

The trapper's tone was that of confidence, and while I hadn't set a trap line for over twenty years, the advice sounded practical.

"Muskrats are easy," the trapper flatly stated. "Rat traps should be set in the mouth of dens and in slides or paths. Usually, bait isn't necessary. 'Coons and foxes are a different story. I boil my traps in a water and walnut solution for at least an hour, sometimes two. This kills both the metal and human scents. After I've boiled the traps long enough to remove all traces of scent, I wear rubber gloves to handle them. Also, a heavier trap is needed. I use a No. 2, double-coil Victor jump trap."

Was this sage advice that of a grizzled mountain man with years of trapping experience under his belt? No, the trapper was a novice - a first-year trapper, and a petite young lady.

Trapping, especially in the last decade, has become an increasingly controversial outdoor sport and the subject of many heated arguments, both privately and publicly. Some well-intentioned groups have gone to considerable lengths to restrict, revise or eliminate trapping.

In a sport usually reserved for the masculine outdoorsman, how did Nancy Kessinger, a New Castle high school cheerleader and the trapper mentioned at the start of this article, become interested in trapping, and what were her views regarding its creditability?

"I've always loved the outdoors, to hunt and fish," Nancy replied. "When muskrats began to damage our farm pond, I decided to set a few traps to control them. My success was good so I skinned and stretched the hides, sold them for a good price, and I was hooked on trapping. I extended my line to Sinking Creek and later on set a few traps for 'coons and foxes. I love the sport, and the money is good."

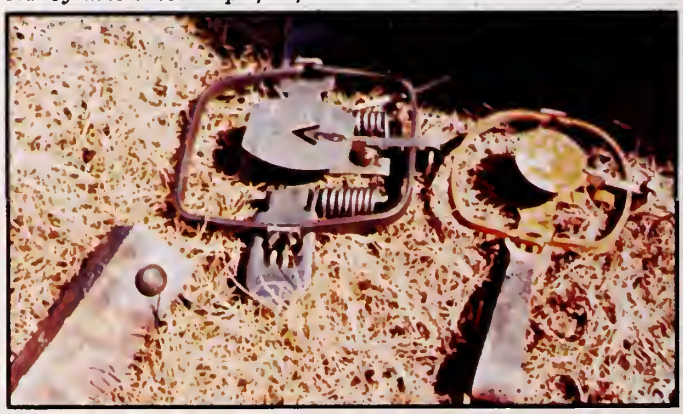
In recent years the demand for good quality pelts has increased, therefore commanding an increase in price. Fur markets fluctuate to some degree even during the course of a season. The prices of pelts will also vary in accordance with the method by which a trapper sells his furs. There are several "buyers" who make a fair profit by buying directly from the trapper, consolidating the furs, and shipping to the processor. For the novice trapper or for those with a small line of traps, this is perhaps the most practical method to market pelts. Most fur buyers are legitimate businessmen, however, it is a good idea to get a quote from at least two.

Trapping, as I remember it from my high school days, is a rewarding outdoor experience, not a cruel or selfish means by which to put a few extra dollars in one's pocket. If the crisp morning air, the ice-cold stream and the crunchy sound of hunting boots breaking frost-covered leaves do not substantially supplement the monetary gains of trapping, it is not advisable to take up the sport.

Trapping is cold, hard work that requires a routine check of all traps once the line has been set. At times there is little reward other than the opportunity to spend a few hours in the solitude of the out of doors. For this reason and for entirely different reasons expressed by the opponents of trapping, the sport is not for everyone.

Trapping has provided me with its share of fond memories. The $1.50 received for a prime muskrat pelt was mightily welcomed money to the high school boy. While trapping is no longer on my list of varied outdoor activities, I firmly feel that those who love the sport, like Nancy Kessinger, should be afforded the opportunity to pursue this rugged, individual sport.

Nancy uses these traps for foxes and coons.



WINTER FIRE!

By TOM HATZ As Told to JIM ROWE

Illustrated by Denis Dale

"It was a funny sort of feeling: the boat burning, maybe about to explode, and here I was in freezing cold water simply deciding to go to sleep. . ."

Sunday, December 30 is not the time to go looking for a lot of pleasure craft in the lower or Southern end of the Chesapeake Bay. A few hardy souls, however, keep their boats in commission year-round because there is some fine fishing during the colder months.

That explains what Tom's 33-foot, 1972 sport fisherman is doing entering the mouth of the York River in fading light at about 1730 hours. Her twin 250-hp chrysler engines are performing beautifully. The trip from Lynhaven Inlet near Virginia Beach has been uneventful.

"I was steering from the flying bridge and my friend had commented that she was purring like a kitten. We had delayed our departure from the Virginia Beach area since better weather had been forecast. My buddy has a little heart trouble and I saw no reason to slog through wet, cold seas if they were supposed to go away. And they did. In the late afternoon we had encountered only slight swells with the wind Northeast 5 to 15 mph."

Since there isn't much traffic, there is little for radio monitoring this time of year. The boat, however, is well-equipped. A good Ship-to-Shore set is aboard, but it was not being operated. Tom's friend is an admitted "CB nut." There are two CB sets aboard and channel 20 is tuned in, but with little or nothing being transmitted. Tom's friend is snoozing in the salon. The skipper is no novice having "messed the water" most of his life not to mention having taken the United States Power Squadron's public boating course.

"First thing I knew, my buddy hollered up that there was smoke coming from the refrigerator. I figured that was pretty strange since it wasn't operating. I glanced at the gauges and everything looked okay. I throttled back and went below for a look-see. Smoke, sure enough! and where there's smoke. . ."

There are three fire extinguishers aboard. Tom knew right where they were because, just after he bought the boat he couldn't find them when he asked for a Courtesy Motorboat Examination from the Coast Guard Auxiliary. He finally got his "Sticker" the next day when he opened the curtains and found all of them neatly concealed.

"I knew I had to find the source of that smoke and to do it we had to lift the hatch. I had been taught that business about keeping oxygen away from a fire, but you can't put out a fire until you know where it is. We put the hot hatch cover in the cockpit and knew we had big trouble because we were in a cloud of smoke. It was thick dark stuff and you couldn't stand it for long. We could just barely see the source of the flames and we immediately emptied two extinguishers at them. I thought to myself that I knew now why they called all that stuff the "minimum" required equipment. We had put our life jackets on and I started thinking some scary thoughts."

All this is going on a few hundred yards from a Coast Guard Station. It's nighttime now and the service long ago abandoned the "man in the tower with glasses" routine. Tom had gone back to the flying bridge within minutes of the first hint of trouble,

Continued on Page 14.

VAMPIRE
KNUTH

By FRANK T. HANENKRAT

Connoisseurs of fine things are fond of a woodland creature who is himself something of a connoisseur, though the thought of his habits is likely to give many people a chill. He's a vampire, with a decided taste for blood.

A vampire? One of those make-believe things in those frightening movies? Not really, ma'am. If you've much experience driving country roads at night, you may have occasionally seen his fiery red eyes flashing from the dim reaches of your headlights, though the possessor of those eyes always vanishes mysteriously into the darkness before he can be seen. He is primarily nocturnal, rising out of the ground, as night descends, to prowl for victims; he is sometimes abroad in the day, but when pursued, he can seemingly vanish into the dusky shadow of a tree or creek bank. He is fond of warm- blooded prey, and if you search the woods diligently, you can sometimes find the bodies of his victims, their necks partially severed and their bodies usually drained of blood.

This is not Count Dracula, or any of his humanoid relatives who exist only in legend, and who are said to rise up out of graves. This vampire emerges from a snug den, and is very much alive, very real--believe it or not--mink! An inhabitant of North America from the Gulf of Mexico to the Arctic Circle, the mink is common in many parts of Virginia. This sleek, slender little fellow is carnivorous, and lives on a varied diet of fish, amphibians, crustaceans, birds and mammals. Unlike many carnivores, however, when this animal has filled his stomach with solid foods, he will sometimes continue to hunt, for he appears to be a connoisseur himself in a ghoulish sort of way. So he goes a-hunting again for "after dinner" victims, apparently drinks their blood, and leaves their bodies otherwise unmolested-- toss-outs to plebian scavengers with less finicky tastes than his. It is possible that the mink also hunts for even darker motives. Despite his well-known taste for blood, he may also hunt some victims merely for the joy of killing, deriving from them neither food nor drink.

The mink does not, as folklore would have it, "slit the throats and suck the blood" of his victims. Rather, with prey such as mice and other small mammals, he sinks his long, saber-like teeth into the back of the victim's neck, just below the base of the skull. Death follows quickly, and the mink then licks the blood that flows from the wound, thus leaving the victim free of external blood clots. This *modus operandi* resembles that of the weasel, and indeed the mink is a member of the weasel family, *Mustelidae*. He belongs to the genus *Mustela*, and the North American mink is known as *Mustela vison*. This scientific name distinguishes him from close relatives who live in widespread areas of Europe and parts of Asia. He is a beautiful little creature, ranging in color from light tan to a deep chocolate brown, with mutant whites being very rare. The American male is usually between 22 and 34 inches long, with some 8 or 9 inches of this length consisting of a bushy tail. He is only 4 or 5 inches high at the shoulder, and like other members of the weasel family, long and slender: the typical male weighs only about 2 pounds, the female half as much.

But don't let the light weight and small size fool you. The mink is one of the most ferocious animals, per pound of body weight, to be encountered in North America. When trapped or cornered, he goes into a rage, and emits a powerful odor that, to many people, is nauseating. Unlike the skunk, however, the mink will not hesitate to fight, even if the attacker is much larger than himself. Because of his sharp claws and teeth, his blurring speed, and his extraordinary aggressiveness, he will often drive off enemies much bigger than himself. His chief enemies are bobcats, foxes and the larger owls.

On the other hand, in different moods the mink is a playful, gregarious animal who romps with his family both in the water and on land. In this respect he shares the water habits of the larger otter, another member of the *Mustelidae* and the land habits of the smaller weasel. Minks mate in early spring, and after a gestation period of 42 days, a litter of 3 to 10 offspring, called kits, are born in April or May in a den beneath a tree or creek bank, or occasionally in a hollow log. The family stay together until late summer or fall, then separate to establish individual hunting ranges, which usually consist of a section of watercourse and the nearby woods and fields.

In October of 1972 my father and I found unmistakable mink signs in the Buckingham-Appomattox State Forest. We were scouting for game in anticipation of the opening of hunting season, and were walking a logging road that traversed a clear-cut area on a ridge. On either side of the ridge were seasonal watercourses, which emptied into a sizable creek at the ridge's end, about a half mile distant. In the strong morning sunlight, we found the body of a mouse, and, in the drying mud nearby, the tracks of a mink. The mouse was unmolested except for wounds on either side of the neck near the base of the skull. The mink had evidently hunted and taken the mouse simply for the blood. The abundance and nature of mink tracks in the area suggested that the mink might have played with his victim, cat-and-mouse fashion, for some time before abandoning him. Whether the play was before or after the mouse's death, we cannot know.

Mink were once harvested by a number of Virginia trappers for their prized fur. Today, competition from commercial mink ranches has driven most mink trappers out of business, though a few remain.

Mink ranching has become a significant industry in some areas of the country. Mink raised in captivity have been bred selectively to produce a variety of fur colors ranging from white and silver to deep, rich brown. The captive mink have also been carefully bred to reduce their ferocious instincts and make them amenable to life in a cage. They are fed a carefully balanced diet served with mechanical regularity and fortified with vitamins and oils to make their coats thick and shiny. Domestic mink supply about 75 percent of all mink fur marketed; the remainder is still supplied from the wild, and a good pelt from the woods will bring upwards of $20 on the current market.

The richness of mink fur, with its incomparable texture, gloss, and color, has made it a prestige women's-wear item. But because of the mink's small size, and the large quantity of pelts required to make a garment of any considerable size, the prices of full-length mink coats and capes remain exceedingly high. Only the rich can indulge their tastes for such luxuries. But if you are one of the discriminating few with an eye for the fine things in life and the money to afford them, consider the mink. Does the thought of his vampirism give you a chill? Never mind. Snuggling inside a mink coat is said to make you feel immediately warm and cozy. The mink may be a vampire, but he belongs to the connoisseurs.

WINTER FIRE

Continued from Page 11.

arriving just as he lost both engines and electric power. That ended any hope for a "Mayday." The cabin doors are tightly closed in hopes that the fire might smother itself. The hatch has flared up so Tom's friend heaves it overboard.

"We opened the doors and tried to cover the hatchway with a tarp, but it caught fire so we went back to the closed door routine. They lock beautifully from the inside, but I had a devil of a time holding them shut from the cockpit. Although things were still under control, I began to worry about my friend. We went to the bow and tried screaming in unison for help. We could see all sorts of lights and evidence of people ashore. In face, we could see several Coast Guard vessels. Nobody heard us. Nobody saw us."

The wind and tide are holding the boat pretty well in position. Tom checked this in hopes that they might drift ashore. No such luck. At this point, the fire is still fairly well hidden. The smoke is intense, but it can't be seen in the dark. The flames are still out of sight for the most part.

"Suddenly, flames broke out in the area of the cabin doors and I knew we couldn't let that go unattended. I moved along the gunnel to get a bucket and that's when I fell overboard! The water didn't feel as cold as I thought it would. That's not to say it was comfortable. I called for help thinking I'd get back on board. That's when I realized how cold that water really was. I had zero energy. It was just plain impossible to get back aboard. It never occurred to me to try swimming for shore. I knew that was a no-no. My friend threw the water hose which I tied around me. I began thinking about the fuel tanks and I didn't like the thoughts."

This is when Tom simply went to sleep. He has persuaded his friend to jump overboard which was no easy task. A security officer at a nearby refinery spots what he thinks is a fire on the end of the Coast Guard pier. The fire department is called and finally some hint of the tragedy occurring just off shore begins to get through. Tom remembers very little of his actual rescue. He recalls checking on his mate and being assured that he was aboard the pick-up boat. There is some memory of a hot towel rub-down that he felt far surpassed what the massage parlors probably offer. His body temperature was below 95 degrees upon arrival at the hospital, yet a few days later Tom was back in his law office. His buddy spent a few days in the hospital and he too survived without complications. The boat burned to the waterline and, after a muffled explosion, sank in about 50 feet of water.

A few weeks later, at a Richmond Power Squadron meeting, Tom shared this story in hopes that others could avoid winter swimming and the like. Some experts think he had an electrical fire when he left Virginia Beach and it smouldered during the trip only to flare up a few miles from home. No one is sure what the cause was. A couple of things are now concrete planks in Tom's boating routine: many and large fire extinguishers, a well-tied knot on his life jacket, a well-practiced fire drill in the pitch dark, an outside latch on all doors, a dinghy or life raft, all sorts of distress signals and he has become an avid teacher in the U.S. Power Squadron boating course. He is not sure that additional knowledge would have helped his situation, but the more he learns, the better he feels.

There was one laugh in this whole story: Tom's wife's first hint of trouble was a phone call from her husband. When he hollered to a nurse and asked, "What's the name of the hospital," Parker Hatz knew it was not an ordinary day.

POLLUTION COSTS HIGH FOR SHENANDOAH AREA. A continuing survey by the Virginia Game Commission's Fish Division indicates a decline in fishing in the South Fork of the Shenandoah River and a subsequent economic loss to the surrounding communities. Fishing pressure on the river this past summer is reported to be down some 72% from 1975 levels. Much of this decline is thought to be the result of mercury pollution in the river.

This pollution caused the issuance of an Emergency Rule on June 6, 1977 and its extension for two years. Fishing is still permitted in the river, but the Virginia State Board of Health prohibits catching or taking the fish for human consumption.

The decline in fishermen this year will probably result in an economic loss to nearby communities. It is conservatively estimated that the loss, because of industrial pollution in the river, will be over $400,000 annually.

GAME COMMISSION TO ISSUE OTTER EXPORT TAGS. The United States Endangered Species Scientific Authority has approved the export of a limited number of river otter pelts taken in Virginia. The ESSA has authorized the Virginia Commission of Game and Inland Fisheries to tag for export 585 river otter pelts for the 1977-78 trapping season. These 585 pelts will be the only ones from Virginia which may be offered for international export for the 1977-78 season.

Since most otter pelts sold in the Virginia fur trade are destined for international export, it will be important for trappers to have pelts tagged before offering them to fur buyers, according to the Commission. Otter pelts without export tags probably will be of lesser value as they cannot be shipped out of this country.

The Game Commission will set up a system whereby river otter trappers can have their otter pelts tagged. The special tags will be attached by Commission personnel to the pelt which is then eligible for international export.

MORE STEEL SHOT REGULATIONS PROPOSED by the U.S. Fish and Wildlife Service. The Service has proposed new areas and appears likely to change the regulations governing which shotgun gauge must use the steel shot instead of lead-loaded shells. The current proposal, published in the November 23 Federal Register, adds the Pacific and Central Flyways to include all four, and makes the implementation of the regulation national in scope for the first time. The zones proposed for nontoxic shot use are areas in which the deposits of lead shot by waterfowl hunters are highest, and the ingestion of spent lead pellets is estimated, by the Fish and Wildlife Service, to cause the deaths of 2 million waterfowl each year.

ENDANGERED SPECIES LISTING for Virginia has been compiled by the Virginia Game Commission. The list includes a number of birds, mammals, reptiles, fish and mollusks. Some of the species on the list are considered only casual transients in Virginia at best, while others, like the Eastern cougar have long been considered doubtful residents of the state. Most of the endangered animals are currently being studied by Game Commission biologists or scientists under contract to the Commission. In some cases, animals thought to be quite rare are turning up in larger numbers once field workers begin concentrating on locating the species. Others, like the Southern bald eagle are currently endangered but are beginning to make a comeback as their environmental problems are slowly solved.

SNOWDRIFT SAFARI

By DONNIE JOHNSTON

The tracks were partially covered with a dry, sifted snow, making it impossible to tell from which direction they came. It looked like three or four deer and, judging from the intensity with which the snow had been falling, they had passed by here about an hour ago.

I first noticed the tracks on a steep bluff overlooking the Thornton River. It was typical Rappahannock County terrain--Blue Ridge Mountain foothills beginning their gradual ascent toward the mother range some 10 miles away.

Today marked the end of another deer season and either bucks or does were legal. Since I was old enough to hold a rifle, I had dreamed of tracking a deer and making my kill. But snow is not that common in this part of the state, especially before deer season ends the first of January. Thus, the opportunity had never really presented itself.

After lunch I threw three 12-inch cinderblocks in the back of my station wagon, grabbed my 30-30 Winchester and started out. I stopped at Edna Mills' store to try to round up a hunting partner so we could drive the thickets if we found no tracks to follow. But Kenny Settle and Wayne Utz, two of the best hunters in the area, had already set out to explore Castleton Mountain and Polecat Mills was huddled around the oil space heater and was not about to leave. John Wayne Settle came by and wanted to hunt, but school had been dismissed early and he would have to babysit. However, he suggested I call Carl Payne who was home early from work and wanted to hunt. Five minutes after I hung up the phone, Carl and I were on our way in his pickup truck.

We would hunt the old Settle farm. It was not very far away and we both knew the country. The farm is split in half by the Thornton. We figured the deer would be in the thickets on the south side today, escaping some of the fury of the storm.

The snow was still falling steadily when we parked at the edge of the farm lane. We walked down the road to the gate that led to the abandoned farmhouse and turned west into the woods. We split up, walking about 150 yards apart. If either of us jumped a deer, the other might have a chance at a shot. After half a mile or so, I drifted to the right to avoid a snarled laurel ridge and wound up on the cliff overlooking the river. Here I found the tracks.

The tracks headed upriver, but turned for the water at the first break in the ice. Here the water was only about a foot deep and the swift current prevented a freeze. A perfect crossing.

On the other side of the river, the tracks split where the four different deer had come through the broomsage. The trail was very faint here and I knew for the first time that I was definitely going in the wrong direction. So, back across the river and up the steep slope I went, climbing on my hands and knees. Still, it was easier going up than it had been coming down.

Suddenly there was movement to my right. I froze. The laurel was cracking, but the sound was too regular to be a deer. Momentarily Carl appeared. I whistled and he rejoined me.

"You see these tracks?" I asked.

"Yeah. I picked them up about half an hour ago and followed them south for a couple hundred yards. But they didn't seem to be getting any fresher, so I came back this way and started hunting the laurel."

"They are heading south," I assured him. "I backtracked across the river and the trail was almost gone in the broomsage. These tracks are getting fresher. Think we've got time to catch up with them?"

"We can try," Carl said. At least we know there are deer somewhere ahead." It was nearing three o'clock and in two-and-a-half hours the January darkness would send another deer season into the record books. It would not be the first year I had been shut out.

The snowflakes became finer and less frequent as we picked up our pace. Once out of the laurel the trail became fresher. Still, we were at least half an hour behind the deer.

"One of those four is a buck," I commented as we skirted a ridge. "Notice how this one set of tracks splits from the rest every once in a while and walks parallel. That old boy is keeping an eye on the back door. Gotta be a buck." Carl concurred just as the trail came to the dirt road on which we had parked.

Once across the road, the tracks moved into an open field and onto posted land. We decided not to follow, but would stay in the trees and circle. We could pick up the trail again when the deer came off the small posted farm. Now we were really walking quickly. The snow had all but stopped as we completed the first arc of our circle and only about an hour of daylight remained.

Suddenly the tracks reappeared, fresher than ever. The deer had changed course and were heading back for the road.

"Look at this," I whispered. "That deer isn't two minutes ahead. Keep an eye on that laruel." No sooner had the words dropped from my lips than a deer appeared about 80 yards ahead. It was a doe moving at a fast walk and instantly it disappeared. Then came a second deer, and a third. I did not wait for the fourth. When the third deer reached an opening between two trees, I threw up the Winchester and fired and missed.

Now the deer were really spooked and began bounding off in all directions. A tail here, a glimpse of gray against the snow there, but nothing to shoot at. Maybe I had shot too soon, but I was not about to stand around and worry.

It took a few minutes to pick up a clear trail. Each member of the group had left the scene in a different direction, but about 100 yards away they got back together and recrossed the road. Now we ran, staying low to the ground, trying to watch the tracks and the woods ahead. The deer at this point had slowed from a run to a walk, but after about 100 yards they began to run again. We were close enough for them to hear. They knew now we were behind them and our chances of getting another shot before dark were very, very slim. We followed over hill and valley, through pine and laurel. We ran when the tracks ran and we slinked when the tracks slowed to a walk. Down a small stream the tracks jumbled as if the deer had been milling around. Then, suddenly, they stopped.

"They've doubled back!" I exclaimed. "We've been going so fast we didn't watch the trail closely enough." We rushed back to the mumbled tracks and sure enough, another trail split right. The deer had bounded the first 20 yards from the old trail and it was easy to miss the sign. It was an old trick.

After another 200 yards, the deer doubled back again, but this time we didn't go for it. Now they were heading for the river. The group recrossed a small open field and moved into a pine thicket. Darkness was closing in. We had no more than 20 minutes left at the very most and it seemed the deer would slip into the protection of the night. Instead of following, we would try to cut them off. It was an outside chance, but there was nothing else left to try. Carl went left and raced for the open field near the farmhouse while I headed right toward the farm lane. If we could beat the deer to either place we might have enough light to get a shot if they crossed.

Up the side of the hill I ran, trying to be as quiet as I could, but realizing speed was now the most important factor. Suddenly I looked down and the tracks I had just abandoned reappeared before me. The deer had doubled back again. They were not heading for the river or the thickets, but back for the road. I followed.

I hadn't gone 10 yards when the outline of a deer appeared against the snowy background ahead. There was brush between us, but the form of the deer was clear. The form was motionless and broadside. I couldn' believe it. I raised the gun, took quick but careful aim behind the front shoulder and squeezed the trigger. The Winchester exploded against the silent evening air. The deer leaped, turned and was gone from sight in the pines. The other three deer now appeared and, tails skyward, bounded out of sight in the opposite direction.

I was sure I had hit the deer, but if I had merely wounded it I might be tracking all night. I walked to the left of where the deer had been and there, crumpled in some honeysuckle, was a doe. From the point where the doe lay to the truck was no more than 75 yards.

A sense of fulfillment came over me as we field dressed the animal. A dream hunt had become a reality. There would be meat in the freezer this year, after all.

W
PHOTOS

nter!
JACK JEFFERS

IS THE DRAGON DOOMED?

By R.V. CORNING

The fishing potential of the Dragon Run may be lost before the year 2000 unless steps are taken to protect that fragile environment.

A survey of the fisheries potential was carried out by the Commission of Game and Inland Fisheries personnel and revealed the delicate nature of that unique ecosystem. If the anticipated population build-up in the Coastal Region (an estimated 70% of the population of Virginia by the year 2000) materializes, the fishery will be of little value unless afforded protection such as Scenic River designation. Benefits derived from being assured protection would outweigh any potential fishery management problems. This unique type of fishing, while limited in appeal, would undoubtedly provide an ever higher degree of satisfaction than it does now.

The Dragon Run could not support a large or extensive fishery, but such a fishery is unlikely since access to the swamp is limited. Additional fishing that might result if Dragon Run received a Scenic River designation should not exceed the capabilities of the fishery. The current population provides better than average fishing for these adventuresome anglers who now brave the swamp's hazzards.

Dragon Run fishermen seem to view fishing as a part of a total outdoor experience and not as an end in itself. Because of this feeling, more stringent regulations would not be viewed with alarm if they became necessary.

The fish toxicant Rotenone was used to sample approximately 0.6 acres of stream just above Wares Bridge on Highway 602. A ½-inch mesh block net at

Photo by Darrell A. Ferrell

the lower end of the sampling section prevented escape of fishes drifting downstream in attempts to avoid the rotenone. Potassium permanganate crystals were used to detoxify the rotenone as it passed the downstream block net, preventing further downstream losses of fish.

The sample area was found to be supporting approximately 70 pounds of fish per surface acre. While considerably below the population of many reservoirs, this poundage is well above most coastal streams of the region.

Altogether, seventeen species of fish were collected. Had a second sample been taken in the lower tidal reaches, a number of additional species would have been collected. Combining captured, known, and possible resident fishes approximately 30 to 35 separate fish species inhabit the drainage.

Water quality was typical of the surrounding region. Fertility of the water was low, the water was somewhat acid, and little man-caused pollution was in evidence.

Fish present in the Dragon Run vary from the common to the rare. Some of the less common or lesser known fishes are as follows: 1) red fin pickerel *Esox americanus americanus*, 2) margined mad tom *Noturus insignis*, 3) flier *Centrarchus macropterus*, 4) bluespotted sunfish *Enneacanthus gloriosus*, 5) banded sunfish *Enneacanthus obesus*, 6) mud sunfish *Acantharchus pomotis*, 7) pirate perch *Aphredoderus sayanus*. All of these species except perhaps the margined mad tom are confined to coastal streams having relatively acidic waters.

Small size at maturity is a characteristic of many lesser known swamp fishes, including red fin pickerel (12 inches maximum). The margined mad tom (6 inches maximum), mud sunfish (6 inches maximum), pirate perch (5 inches maximum), banded sunfish (3 inches maximum), and blue spotted sunfish (2¾ maximum) would all be considered pygmys in most waters.

Red fin pickerel have been reported as inhabiting most major coastal drainages of Virginia. However, the species is by no means abundant and is generally confined to swampy, inaccessible tributary waters. While looking somewhat like the common chain pickerel, the red fin pickerel has a blunter "snout", bars on the sides instead of chains, has red edged fins, and never attains the size of chain pickerel.

Margined mad tom are miniature versions of the larger bullhead catfish except for the joining of the rear fins to form a continuous margin giving rise to the fishes name. Mad tom, although not taken by fishermen on hook and line, have interesting life histories and are desirable from a naturalist viewpoint.

Pirate perch have two claims to fame. They are the only member of the family *Aphredoolevidae* to be found in the United States and as they mature their anal openings move from the position common to most fishes, to positions immediately behind the lower, foward (pectoral) fins.

Bluespotted sunfish may be plentiful, as in Dragon Run, but completely overlooked by fishermen and visitors. Those lucky enough to observe the bluespotted sunfish will quickly be captivated by their small size and striking coloration. The same holds true of the banded sunfish. Mud sunfish are of primary interest because of their size and life history. All of these sunfishes are utilized extensively as forage food by predatory fish.

Of the larger species captured by hook and line, the flier and the chain pickerel thrive in acid waters of the kind found in Dragon Run. Seldom are they observed in waters that are neutral or alkaline in nature. For this reason, the two species are confined to lowland streams and lowland impoundments of the Coastal states.

The importance of the Dragon Run for scientific studies in the near future as well as a basis for ecological comparisons by future generations, should not be overlooked. One of the major problems encountered by ecologists, limnologists and naturalists has been the inability to compare existing conditions with conditions that existed prior to the impact of man on his environment. Perpetuation of Dragon Run as a relatively unaltered ecotype could be of great value in separating future changes brought about by man in other swampland drainages.

To give an example of just one of the many Dragon Run mysteries, one of the characteristics seemingly unique to waters like Dragon Run was brought out by the fish collection data. A normal concept of the Pyramid of Numbers and the so called Food Chain (common ecological concepts) is that with each step up in the pyramid or along a food chain, the quantity of a species preying on lower links in the food chain is less than the quantity of their prey. This reduction appears necessary because the ratio of food eaten to flesh conversion is usually 4:1 or greater. However, approximately 61% of the fishes captured using a non-selective toxicant were predatory and only 39% were prey species. This phenomena, although contrary to standard textbook descriptions of predator-prey relationships, appears to be the norm for swampy coastal stream waters!

Protection of unique exosystems such as found in Dragon Run is important to the fisherman and wilderness lover, the ecologist, and possibly to all of humanity as the number of such areas shrinks under pressures of population and development. Subjected to draining, filling,siltation, eutrophication, clearing and pollution, the little fishes of the Dragon cannot long survive.

UP .....

ACROSS .....

OVER .....

BLUE BIRDS ALWAYS LOSE!

By M.W. LOUGH

Several months ago there was an article in *Virginia Wildlife* that concerned Virginia snakes and how we should not indiscriminately kill them on sight.

I agree in principle with the premise but, let me tell you a story of a snake in my experience.

My wife and I bought eight acres of land near Burr Hill in Orange County, Virginia. This land was covered with a fifteen year growth of young pines and underbrush. We worked hard with it and transformed it into a paradise. It was a natural for bird life and since we are especially fond of blue birds we constructed and placed many boxes for them. They attracted many families of the beautiful creatures and we enjoyed their sights and sounds until one day a strange silence pervaded the area. We suddenly heard no more bird sounds and saw no more blue birds.

We couldn't understand it until one day as we ate lunch in our summer home we heard a thud outside as if something heavy had fallen from a tree. We went outside and found a six foot black snake. The story of his lunch is vividly portrayed in the accompanying pictures.

..... AND IN !

I suppose the birds will eventually return. I did kill the snake after he entered the box as pictured. I'm not advocating to all bird lovers to kill all snakes on sight, I'm simply telling you what happened in my case and am hoping you will form your own judgements and make your own decisions.

Gilbert Wins Stamp Contest!

A dramatic watercolor painting of a drake (male) hooded merganser in full breeding plumage by Albert Earl Gilbert of Washington, Connecticut, won the 1978-79 Duck Stamp competition November 10 at the Interior Department.

Gilbert's design will be reproduced on next year's $5 Migratory Bird Hunting and Conservation Stamp purchased by waterfowl hunters 16 years of age or older, philatelists, and conservationists. Revenues from the stamp are used to buy additional wetland habitat under a program administered by the U. S. Fish and Wildlife Service.

Gilbert, 38, has been a freelance wildlife artist for the past 18 years. He has never had any formal art training and this was his first entry into the Duck Stamp competition.

The artist has done considerable work for the National Audubon Society, National Wildlife Federation, and American Museum of Natural History in New York. His paintings have appeared in many

conservation magazines and are avidly sought by collectors. Gilbert has traveled throughout the world to sketch and paint his subjects and earlier this year returned from Africa where he spent 6 months sketching endangered species. He is currently first vice president of the Society of Animal Artists.

The hooded merganser is one of the more spectacular of waterfowl species because of the pompadour hood it raises and lowers at will to show excitement. It is a small, retiring bird which nests in tree cavities and is found primarily in the Eastern half of the United States and on the Northwest coast. The male is basically black and white with reddish flanks.

In his painting of a full-plumaged drake swimming on a pond, Gilbert was concerned with symmetry and balance and wanted to use the bird and its reflection to create an interesting design. His work won over those of 295 other entrants, a record for the contest, scoring 44 out of a possible 50 points.

Prior to 1949, wildlife artists were commissioned to provide a design for the annual stamp. Since that time, the design has been chosen by a contest open to all artists who are residents or citizens of the United States.

The annual competition is the only art contest regularly sponsored by the Federal Government. The colorful stamps constitute the longest running, annually issued series of stamps in revenue or postage stamp history.

Since 1934 when Duck Stamps first went on sale, over $200 million in revenue has been collected and used for the acquisition of 2.1 million acres of prime waterfowl habitat. By purchasing the stamps, more than 2.4 million conservationists annually provide close to $12 million in revenue.

Photo by Satterlee

In the 1977 State and Western Regional Big Game Trophy Contest included, left to right, T.A. Phillips who was State winner in the 30th annual contest with a 12 point buck which scored 223/4/8. Phillips, who lives in Forest, VA. killed the trophy in Bedford County, Va. Winners in the Western Regional included Phillips and the following: Class II (778 points) C.W. Gilchrist from Lynchburg, Va. with an 8 point buck which scored 181/3/8. Class III winner was Larry Kite from McGaheysville, Va. with a 6 point buck scoring 130/7/8. Class IV Archery winner was Alfred Howery for the 11 point buck he killed in Montgomery County. The head scored 184/9/16. Winner in the Bear category was John R. Gray with the animal he killed in Rockbridge County and which scored 25/3/8. Holding the winning turkey is James Nycum who represented his father-in-law, L. Donald Allanson from Staunton, Va. who killed the bird in Highland County. The turkey scored 50/1/8.

Prints of John Taylor's cardinal are now being offered for $4.00. The prints measure 9" X 12" and are also available matted for $6.00. For prints and an attractive brochure of other art work contact, Heritage Arts, Rt. 1, Box 175A, St. Michael's , Maryland 21663.

Do Fish Have A Drinking Problem?

By BILL WEEKES

Illustration by Diane Grant

Ever hear of a fish with a "drinking problem?" Ever hear of a fish bemoan the fact there's "water, water everywhere but none of it to drink?" Could a fish suffer dehydration, or not even drink a drop and still become bloated enough to burst?

If it were not for various evolutionary mechanisms, that bass you pulled into the boat, or that snapper you dragged in from the surf could very well have water problems. Because water is their environment, fishes have had to adapt physiologically in order that their bodies may exist with neither too much nor too little of life's medium, water. Wrapped up in this problem is salt and its concentration in the fish's body. To exist, fishes must maintain a "happy" state of giving and taking salt and water. The "happy" state is what biologists call "homeostasis," a process wherein an animal maintains some sort of constant internal state in the face of external change. Fish, freshwater and saltwater, work to keep this steady state of just enough water and salt in their systems. Their bodies work at this in order to survive.

Freshwater fishes struggle to keep from becoming water-logged. Salt water fishes struggle to keep from becoming dehydrated. The key to this battle involves osmosis, the movement of water and dissolved materials across membranes from areas of greater concentration to areas of lesser concentration. Osmosis represents a type of diffusion of materials with the objective of establishing a concentration equilibrium between regions of differing concentrations. The ease and speed with which this equilibrium takes place depends on the permeability of the membranes and the degree of concentrations involved.

Homeostasis involves two essential materials, water and salt. Water, of course, is the essential constituent of all living things. It is the medium wherein nutrients are transported to cells and wherein cellular reactions of metabolism occur. Salts, like sodium and calcium, are important ingredients in regulating cell surface permeability and are, therefore, essential in helping control cell nutrient intake and water (osmotic) balance.

How then do fishes maintain their proper "happy state" of water and salt concentrations in their bodies? The process is called osmoregulation and the mechanisms involved are kidney, digestive system, gills and body surface.

Regarding osmoregulation both the freshwater and saltwater fish has a problem "to solve." The problem of the fish living in one type of medium, however, is the antithesis of the problem of the fish living in the other medium. The obvious reason: the freshwater fish lives in a medium (lake, stream, pond) where the salinity is less than .5 part per thousand, while the marine fish dwells in a medium (sea or ocean) where the salt content ranges from 30 to 37 parts per thousand.

Most fishes maintain a low salt concentration in their bodies, about one-third that of sea water (or about ten parts per thousand). However, for the freshwater fish this salinity greatly exceeds the salinity of fresh water. This means there is a net osmotic movement of water into the freshwater fish - some through the skin (in those species where the integument is somewhat permeable to water), very little through the stomach ("drinking"), but most through the gills and oral membranes. The gills represent an area surface at least twice that of the skin surface. The freshwater fish, therefore, must have an efficient means of getting rid of this excess water, otherwise its body would swell up and burst.

Not only could freshwater fish be in danger of "blowing up," but while water is entering the system salt ions are tending to diffuse out of the body where surface membranes are permeable, and in the urine, which is dilute (less saline than the body fluids).

The great mechanism by which freshwater fishes discharge the ex-

cess water which tends to invade them is the kidney. The freshwater fish's kidney is capable of excreting copious amounts of urine. This "bailing out" of excess water occurs as fast as such water invades the system (most fish do not have a urinary bladder).

The internal salt loss of freshwater fish is reestablished, in part, by salt in ingested food; in part by absorption of salt from the medium through the gills; and, in part, by the conserving of, or the filtering back of salts into the blood from the fluids passing through the kidneys (the reason why the urine is dilute). Salt obtained from the medium is actively transported (as opposed to osmosis, which is a passive transport process) by the gills into the blood system. The exact mechanism involved in this salt pump in the gills has not been yet explained by biologists, but the process requires energy.

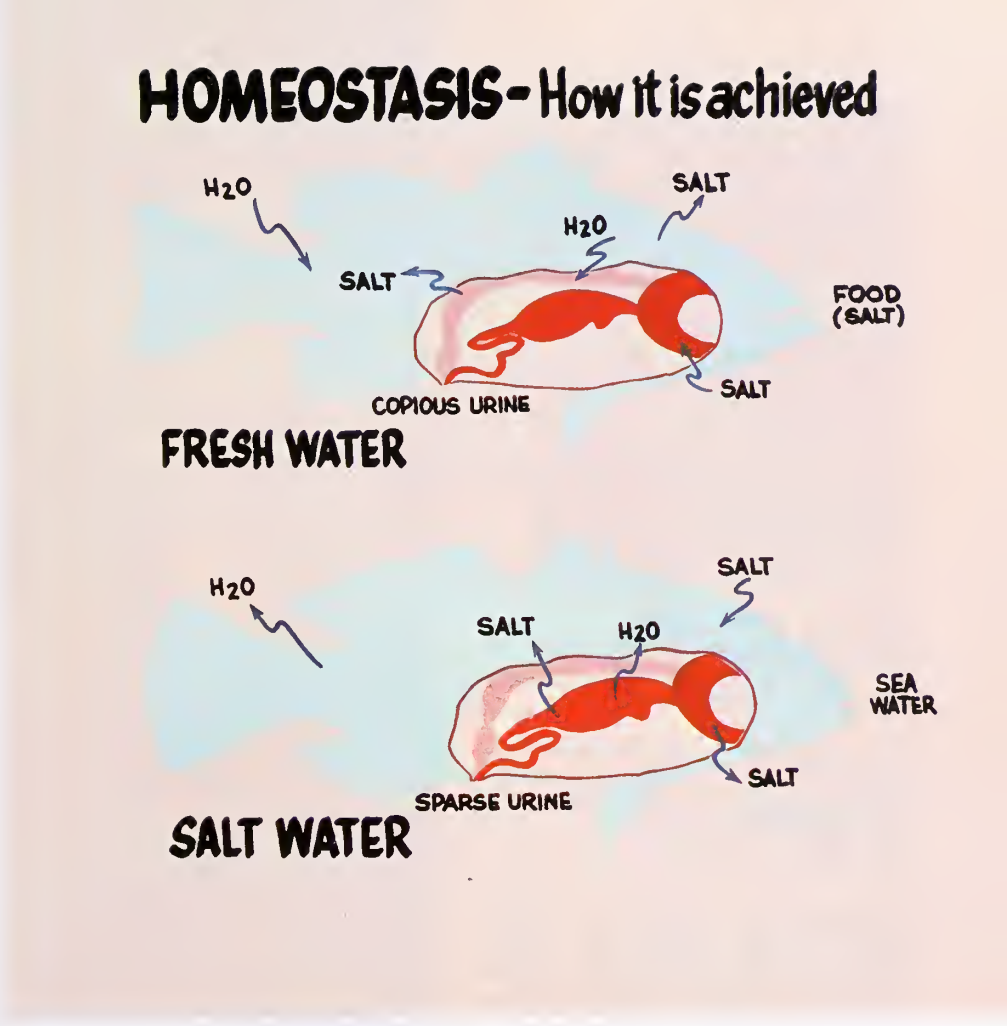
While the freshwater fish is a water teetotaler, the piscatorial denizen of the brine guzzles the stuff. The marine bony fish (teleosts) can't "go on the wagon" or he would dry up. The reason for this is the fact that the salt water medium is about two thirds more saline than the fluids found in the marine fish's system. The result is the teleost (which constitutes the vast majority of fishes found in the ocean) loses water by diffusion through the gills and, to a small extent, through the body surface.

To compensate for this water loss the marine fish gulps sea water. The problem here, however, is when the fish does this, he is also ingesting salt, thereby exceeding the normal amount of this material its body needs or requires. How to get rid of this excess of salt? Excrete it through the kidneys?

The marine fish cannot excrete salt through its kidneys. The problem here is that the fish's kidney is not capable of forming urine more concentrated in salt than is found in the system's body fluids. It would take more water to form a urine concentrated enough to get rid of the salt a marine fish swallowed than it would the water taken in by drinking. Consequently, a marine fish's urine output is sparse and its kidneys less well developed than those of a freshwater fish.

So a marine fish must eliminate excess salt by a means other than the kidneys. It does so through the gills. Certain salt ions absorbed through the digestive tract enter the blood stream and circulate through the body to the gills where they are pumped out into sea water, which is more concentrated. Another adaptation is where the absorptive cells lining the digestive tract are relatively impermeable to certain other salt ions so that most of them pass through the tract and are eliminated in the feces.

There is some disagreement among biologists, but many agree that the freshwater origin of the bony fish is suggested from the dilute salinity of all modern bony fish and the low salt content of urine excreted from today's freshwater species. Geological findings indicate the bony fish of today's oceans migrated from freshwater during the Cretaceous period 100 million years ago. Many fish species re-invade fresh water from salt water even today. Such species as the king salmon and brown trout are capable of becoming acclimated to either fresh or salt media. They are able to do this by reversing the salt pump flow of salt either into or out of their bodies through their gills. This enables the concentration of salt in their bodies to remain at safe and comfortable levels during these environmental transitions.



This drawing illustrates the way fresh and saltwater fish maintain a balance of salt and water concentrations in their bodies.

WHAT BIRD WAS THAT?

CEDAR WAXWING

By RICHARD L. SHROEDER II

A brilliant summer sun lit up the entire marsh. Cattails swayed in the gentle breeze, and the sound of birds filled the air. A bird perched on a cattail sang out a harsh but melodious "kong-ka-ree." Its black feathers glistened in the sun and its bright red shoulder patches stood out boldly. It appeared to be shaped like a robin, but was somewhat smaller. What bird was that?

Birdwatching and identification is fast becoming a national pastime. More and more people are taking to the woods, the shore, or local park to observe and enjoy the birdlife in their area. Learning to identify birds can be time consuming and difficult for many beginners. Many birds look alike at first glance and it seems they never sit still long enough for detailed study. How can you learn to separate and identify them with ease?

Let's go back to the bird at the marsh described in the beginning paragraph. Did you guess it to be a red-winged blackbird? There were several clues leading to that answer. The area was a cattail marsh and the time was summer. The bird's song was described, along with its colors and markings. It was shaped somewhat like a robin, but was smaller. There are actually six separate clues or variables given in the red-winged blackbird description.

These six variables are a part of what I call the six "S" system for birdwatching. The variables are season, site, shape, size, sight and song. A thorough knowledge of these will help anyone identify birds more quickly and accurately. A good field guide combined with patience and experience will be your best teachers.

The season will tell you a lot about what kinds of birds are in an area. Although some species are year round residents in Virginia, many birds are here only during certain seasons. For example, warblers are generally seen during the spring, summer and fall, so you wouldn't expect to see one in the winter. The site, or habitat, provides a good clue to a bird's identification. Certain birds, such as horned larks, eastern meadowlarks, and savannah sparrows, are seen mostly

GOLDFINCH

WHITE-THROATED SPARROW

RED-WINGED BLACKBIRD

in open fields. Others, like the blue jay, hermit thrush and tufted titmouse, are found in wooded areas. Some birds are restricted to a very specific habitat. The rare Bachman's warbler nests only in large wooded swamps in a few remote locations in the southeast.

A bird's general shape, or even the shape of part of a bird, will help to classify it. Is it tall and thin, or short and squat? At a shoreline habitat tall, thin birds might be herons or egrets, while short, squat birds might be coots or rails. The bill of a bird is often helpful in identification. A thick, cone-shaped bill belongs to sparrows, finches, and grosbeaks of the family Fringillidae. A slender, straight, pointed bill would most likely indicate a type of wood warbler.

Have you ever seen a "wild canary?" There is a good chance the bird you've actually seen is an American goldfinch. The goldfinch is a year-round resident in some parts of Virginia. It is often seen in flocks during migration and the winter months. Weedy fields, roadside hedges, and brushy areas attract goldfinches. They are so fond of eating the seed of thistles that they have been nicknamed the "thistlebird." Their shape is sparrow-like, and their heavy conical bill is adapted to cracking seeds. About 4" long, the male goldfinch is a bright yellow with a black cap and wings. The female is notably duller in color, as is the male in the winter months. Both the flight and song of the American goldfinch are helpful in identifying it. The flight is undulating, a repeated climbing and dipping. The call is a bright "per-chik-o-ree."

The American kestrel, previously called the sparrow hawk, is our smallest falcon. At 8-10" it is only slightly larger than a robin. A year-round resident, the kestrel is found mostly in open and semi-open country. It has a sleek shape with a rounded head and narrow, pointed wings. A conspicuous habit of the kestrel is to hover over a field while searching for prey.

The male kestrel is a beautifully colored bird. It has a rusty back and tail, light underparts, and bluish wings. The female is more uniform in color and lacks the bluish wings. A rapid, high "killy, killy, killy" is the call of the American kestrel.

The four birds pictured here represent only a small portion of the birds found in Virginia. Each bird is unique and differs from every other in some way. A few are nearly identical except for one distinguishing characteristic.

Learning to identify birds is a relaxing and rewarding hobby. It increases our awareness of life, and helps us appreciate the diversity and abundance of natural things. Birds are present everywhere, from the center of our deepest forests to the middle of our largest cities. An average backyard should be a home at some time during the year for some 20 to 30 different species of birds.

The six "S" system--season, site, shape, size, sight and song--is a helpful way to learn about birds. Use it and you will soon master the identification of the more common birds. Then tackle the rarities. Before you know it, you'll be rivaling John J. Audubon himself.

Venison: It Can Be a Savory Treat

By EDWIN L. PEARCE

When I think of venison, I'm reminded of the sideshow hawker at the carnival who stands out front and extolls the virtues of the inside attraction. When I realize that millions of people have never tasted venison, I want to become the hawker. For it's truly a savory treat, with its own peculiar and delightful taste and flavor. In the estimation of many, it's superior to our must-have beef.

I've traveled a great deal, including much Army service, and wherever I was, I learned the local methods of cooking venison. By swapping and sharing, I've collected countless recipes in some 20 states, Europe and Asia.

The aging of deer is a very important prerequisite to good venison, for it not only improves the flavor but makes the meat more tender. The carcass should be hung from one to three weeks at about 36 degrees or until a light mold forms.

How about it? Have you been missing out on the fun and the very good meals in eating what our forefathers considered the best food long before beef became popular? If so, cook one of these delectable meals, let the aroma drift out to the family and guests and be ready to furnish seconds to all.

Because they require no aging, the liver and heart can be enjoyed soon after you've bagged your deer.

LIVER. From a North Carolina motel owner who caters to deer hunters:

Remove the thick skin and tubes from a whole liver. Wash in cold water and cut into 3/8-inch slices. Remove as much skin and gristle as possible. Refrigerate for a few hours before cooking or soak it overnight in salt water.

About 45 minutes before eating time, dip slices of liver into juice of 1/2 lemon and sprinkle meat tenderizer on meat. Slice 2 large onions into a skillet, and saute for 10 minutes. Put onion slices into a warmed dish and quickly saute liver slices until barely done. Salt as desired and heap onions on top. Serve hot from skillet at table.

HEART. From a housewife who gets mad when her hunter husband ruins the heart with his shot:

Soak the heart in salt water overnight, or all day. Drain for a few minutes and rub the inside with salt. Stuff heart using mixture of bread crumbs, chopped celery, chopped onions and ground sage moistened with warm milk and melted butter. Close up with skewers as tightly as possible. Put heart in roasting pan, and pour over it one cup water and several tablespoonsful of brandy. Bake in covered pan at 325 degrees for 1-1/2 hours or until tender. Add water when necessary and baste every 10 minutes. Remove heart from oven, slice onto heated platter and pour pan juices over it. Bake potatoes in oven at same time. With a salad and the potatoes, this makes a complete dinner for four.

VENISON POT ROAST. A real budget-stretcher and a delicious meal. Use an arm or chuck roast and trim any fat or membrane.

3-lb arm or chuck roast	6 medium carrots, pared
2 T salad oil	and cut into 2-inch lengths
1 t salt	6 medium onions, peeled
1 T wine vinegar	2 bags sauerkraut
1/2 t dried thyme leaves	

In a 5-qt dutch oven, brown venison in hot oil about 15 minutes, turning it on all sides. Add thyme, 2 cups water, vinegar, salt, carrots and onions. Cook over medium heat, covered, about 2 hours, turning occasionally.

While the roast is cooking, wash and drain sauerkraut. After 2 hours, add to venison and cook, covered, 30 minutes longer, stirring occasionally. Remove venison and vegetables to platter. Slice roast on a slant as you would London Broil beef and serve with pan juices. 10 servings.

Steaks, famous as being the choice cuts from beef, are also favored by those who like the exact same cuts of venison. For a family dinner, we like rib steaks prepared this way. We got this recipe from a housewife in New Mexico:

VENISON STEAKS—BARBECUED. Prepare your venison steaks properly:

Using l qt water, 2 T vinegar and 1 t household soda, saturate venison steaks about 30 minutes, remove and drain on paper towels. Removes gamey taste and tenderizes meat. Or use sweet milk in the same way. Then barbecue as follows:

Barbecue Sauce. 3 sticks margerine. Melt in saucepan, add 1/2 t Worcestershire sauce, can of tomato sauce or 1 cup catsup. Mix well, adding slowly and continue stirring:

1 t black pepper	1 t salt
1/2 cup chopped onion	1/2 cup lemon juice
1/2 t garlic salt	1/2 t thyme

Marinate steaks 3 or 4 hours in the barbecue sauce before cooking. While cooking turn and baste occasionally with the sauce.

VENISON SAUERBRATEN. From a Pennsylvania hunter who loves his German cooking:

4-lbs venison roast, 3 inches thick

2 cups water	1 cup sliced onions
1 T salt	2 cups wine vinegar
3 bay leaves	2 t sugar
6 cloves	6 T fat

Remove all fat possible from roast, and wipe with cloth dampened in vinegar. Marinate roast overnight in vinegar, water, onions, bay leaves, cloves, pepper, salt and sugar. Drain roast, dry and brown in hot shortening. Place roast on rack in Dutch oven. Strain marinade and add two or three cups to roast. Cover and roast at about 325 degrees in oven for 2 hours. Thicken gravy and serve over sliced roast.

RIB STEAKS.

2 or more 1-inch thick rib steaks

2 T lemon juice	1/2 cup olive oil
Freshly ground black pepper	Salt

In a dish large enough to hold the steaks in one layer, mix the olive oil and lemon juice. Lay the steaks in this marinade, turn them over to moisten each side, then cover the dish. Leave them at room temperature for 6 hours, turning them occasionally.

Drain the steaks, brush them lightly with olive oil and broil them to the doneness you prefer, but do not overcook; they're much better rare. Sprinkle with salt and pepper and serve with lemon squares.

THE SCRAPS. On each deer, after the choice cuts of steaks, roasts and chops, there's a world of so-called scraps. They come from the ribs, the neck, the shoulders and the legs or are trimmings from other parts of the animal. They're commonly called scraps or 'stew meat.' When properly prepared by cubing or grinding and cooked, they can be made into many delicious meals.

VENISON STEW. This is my own special; good hot or warmed up—at home or in camp. Brown 1-1/2 lbs stew meat or cubed roast in 2 T margarine. Drop the browned braised cubes into one qt of boiling water in a Dutch oven and simmer, over low heat, covered, for 1-1/2 hours at about 300 degrees. Add 1 cup chopped onions, 1 cup chopped celery, 1/4 t garlic powder, 1 t salt, 1/4 t pepper, 1 T sugar, 1 T vinegar and the juice of 1/2 lemon, plus four potatoes peeled and quartered and four carrots cut into pieces. Continue cooking for 30 minutes.

With hard-crusted bread, a cup of coffee or a glass of wine, you've a complete and satisfying meal for four.

KOREAN VENISON. Everything is different in Korea. Austerity is the rule, even in cooking and eating. The principal food is rice and it's usually mixed with bits of dried fish. But when meat is available, such as that of the Sika deer, there's much rejoicing. This little native deer is small and has tusks protruding from both sides of his mouth. He uses these tusks to dig in snow for roots and he is fairly plentiful.

The Koreans make no distinction between roasts, steaks, chops and stew meat as we Americans do. The entire animal is quickly skinned, cut up into pieces small enough to fit into the family cooking pot and put on a slow boil. One of the small fry of the family is placed on guard and keeps the fire going constantly adding more rice straw. The meat boils and simmers ad infinitum until it literally falls off the bones. It's then removed from the water and allowed to cool; later it's chopped into very small pieces, sprinkled with salt and a spice similar to oregano and tossed with fluffy rice, which is then eaten with chopsticks. Surprisingly, it's very flavorful and makes a filling meal.

When you've eaten venison prepared and cooked by these recipes, I'm sure you'll agree that there's no better meal. Not only your family but your guests too, will praise your cooking.

If you're doubtful about the reception of first-time guests to venison, don't tell them it's venison until they've oh'd and ah'd on the excellent meal. That way, their preconceived and prejudiced distaste of wild meat will not preclude their enjoyment of what is probably the tastiest of all meats.

On The Waterfront

Edited by Jim Kerrick

WEATHER

To be a safe boatman, you must keep your mind on course and one eye and an ear tuned to the weather. Storms always seem to strike hardest when they are not expected. This may be because no boatman should go afloat knowing that a storm is on the way. A skipper's ear is tuned to his radio for the latest weather report and forecast. His eye searches for weather information from newspapers and he scans the sky for signs of changing weather.

Weather is never certain. There are no rules or sayings that are always true. The blackest skies may not drop rain and the clearest day may develop storms in a few moments.

Changes usually move from west to the east. This has led to a saying which in most cases is true, that bad weather changes come from the west. Chances are that a storm to the west of you will hit you soon and seldom pass you by. Storms to the north and east may pass over, but this is not always so.

Watch for shifts in the direction of the wind. When a wind shifts, it means that there will be a change in the weather.

Storms happen because the air can no longer hold the water that it has in it. Air is always moving and the pressure changes as different bodies of air pass over the earth. The air pressure changes can be seen on a barometer.

This is an instrument for measuring the changes in air pressure. When the air is heavy or high, it gives a high reading on the barometer. If the barometer reading is rising, fair weather is usually on the way. If the barometer is falling, poor weather is usually on the way. Because of the heavier air when the pressure is high, clouds are usually much higher in the sky. Low pressure usually brings with it low clouds in the sky. The clouds are made of water vapor.

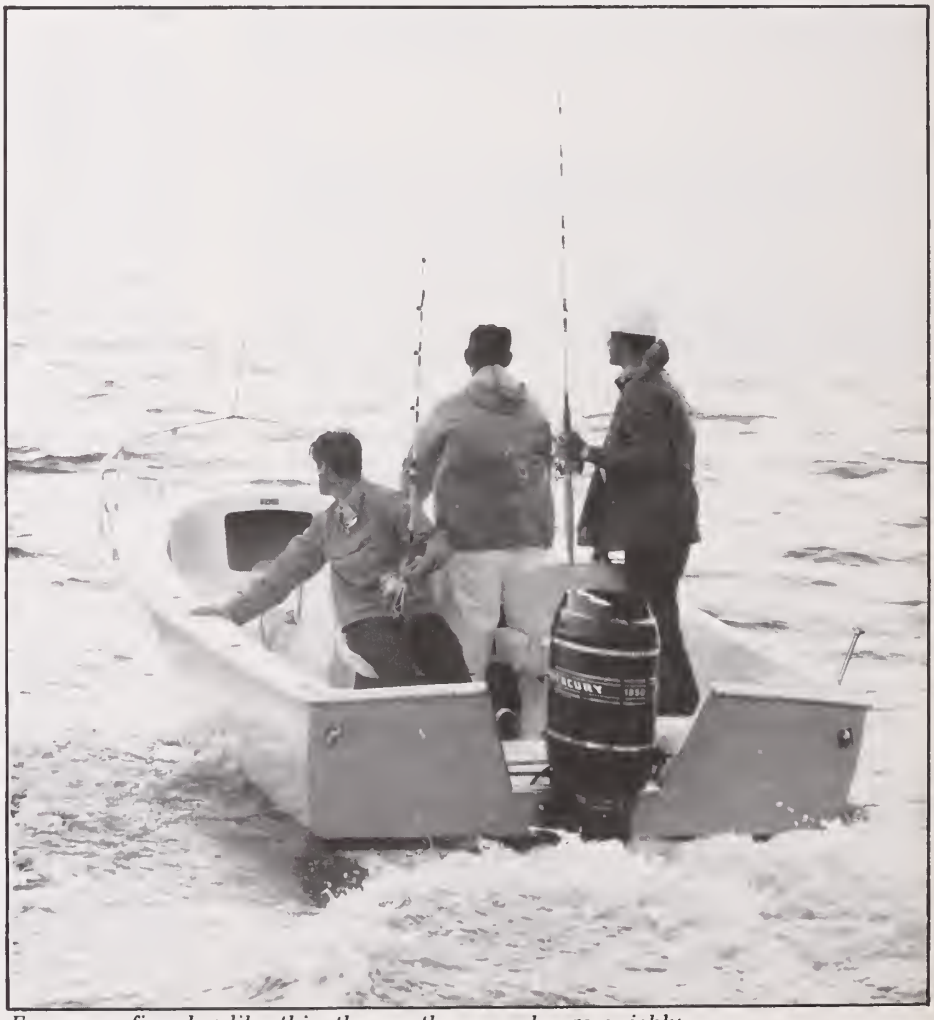
Water vapor is particles of water too small to make a drop of water. When they are cooled, they form drops of water which fall as rain, snow, sleet or hail.

A smoking chimney can tell you about air pressure. If the air is still and the smoke rises straight up, that air is high pressure air. If the smoke dips first from the chimney and then rises, there is a low pressure and poor weather should follow.

Sunsets and sunrises sometimes tell a weather story. A seaman's saying is that a bright red sky in the evening usually means good weather tomorrow and that a bright red sky in the morning usually means poor weather ahead.

Some seamen feel that a ring or halo around the sun or the moon means poor weather is coming.

A red pennant flying on a flag pole along the shore during the day or a red light over a white light at night are storm warnings for small craft. When you see such signals, make for shore as soon as possible. Don't try to outsmart the weather. It sometimes outsmarts the best trained weathermen of the United States Weather Bureau.



Even on a fine day like this, the weather can change quickly

Growing Up Outdoors

By Sandy Coleman

RAINY DAY FUN

Illustration by Diane Grant

Matt looked out on the cold, grey winter day. "Rain again," he sighed as his little sister Amy plopped down on the window seat beside him.

"Do you think it's too cold to go outside again, Matt?" she asked eagerly.

"Yes, I am afraid so. The cold isn't so bad, but when it rains, too, it is hard to have any fun outdoors," Matt explained patiently.

"Well, what can we do? I'm tired of watching television," Amy said somewhat impatiently.

As Matt began to think of an answer for his unhappy little sister, their Mom entered the room.

"Look what I got for both of you," she said to the two children. "It's a coloring book full of pictures of fish and things that you find in the Atlantic Ocean."

"Hey, that sounds fun!" Matt shouted excitedly. "Let me see it, please, Mom."

Matt and Amy's mother handed the coloring books over to the two youngsters with a relieved smile. She, too, had been feeling the pressure of the two house-bound children.

"Okay, Amy, let's see what this looks like," said Matt as he opened his new coloring book. Amy did the same and soon the two were absorbed in studying the pictures and reading all about the fish that they were going to soon begin coloring.

"Amy, that's not the way to do it," Matt said to his little sister as she picked up a crayon and began to color a drawing of a swordfish with the purple color in her hand. "The best way to do it is to try to color the fish the color that they really are."

Amy, who always colored people green was a little perplexed.

"But, Matt, that is the way I want to do it," she protested. "It will be much prettier that way," the five- year-old said.

"Okay," Matt said. "You can do it any way you want. But I'm going to color the fish exactly the way they are supposed to be."

Matt went into the family den and took a book down from the shelf that had colorful pictures of many kinds of ocean life. "This will be my guide so that I can be sure to get everything exactly right," he thought to himself.

Matt and Amy spent the rest of the afternoon working on their new coloring books.

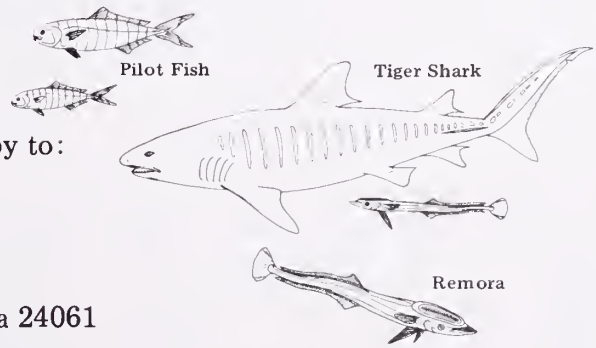
"This was so much fun," he said later, "I wonder what other things we could find to do dealing with animals and other kinds of wildlife that we could do indoors." Matt thought this over for some time and soon found that he was full of ideas.

"Well, we could make a wildlife scrapbook with our pictures," he said to Amy.

"Yes," Amy cried excitedly.

The two put their heads together and began to plan.

You Too Can Order This Coloring Book!



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IT APPEARS TO ME

BY CURLY

. . . A PERSON OUGHT TO HAVE ONE

With the winter weather here, it is the time to "tolerate" being house-bound if for no other reason than to consider the options and ponder the possibilities of the things to do, come Spring. Our neighbors at the Bureau of Outdoor Recreation have produced some free items which might be of interest. Write to them and ask for a copy of OUTDOOR RECREATION ACTION, Report No. 44, "America's Wilderness Heritage" or for CANOEING IN THE N.E.UNITED STATES or, A CATALOG OF GUIDES TO OUTDOOR RECREATION AREAS AND FACILITIES any one of which will provide some good dreaming material. BOR, 600 Arch St., Room 9310, Philadelphia, Pa. 19106.

Mark Sullivan's recent piece for the wildlife Federation, "THE ABC'S ABOUT BEVERAGE CONTAINERS" is your way to take an in-depth look at the extremely complex problems which all of us face regarding the disposable container issue. In addition to listing the various sources where information and data pertaining to this problem can be obtained it also deals with the nitty-gritty details effecting us as taxpayers and consumers. Single copies only are free by contacting the Educational Services Division, National Wildlife Federation, 1412 16th St., N.W. Washington, D.C. 20036.

The Office of Congressional & Public Affairs, U.S. Environmental Protection Agency, 6th & Walnut Streets, Philadelphia, Pa. 19106 is the address where you can write for your free copy of the 1978 AUTO GAS MILEAGE GUIDE. In this handy little item you can determine such things as the city, country or combined gasoline mileage of your next "buggy", the average amount of money it will cost you per year for gas and even learn some tips about driving that will save you money. It might even help you in dickering with a dealer for your next car.

FOR YOUR BOOKSHELF

Just in time for the type of weather which we are now (enjoying) Doubleday has published THE COLD WEATHER CATALOG. In this 224 pager you can learn interesting things about winter and how to cope, which range from bird feeding, and how to attract wildlife to your backyard to candle making, the proper techniques for open fire cooking and even the fool-proof way to cut out paper snowflakes. The COLD WEATHER CATALOG or "Learning to Love Winter" is available for $7.95 from Dolphin Books/Doubleday & Co., Inc., Garden City, New York.

Yet another Virginian has produced a book which is certainly more than worthy of a place on your bookshelf. Cliff Netherton, who is well known throughout the Commonwealth for his ceaseless efforts in helping to teach young people about fishing and the various techniques involved has authored ANGLING AND CASTING, A manual for Self and Class Instruction. Within the hard-bound 157 pages Cliff has packed a life time of learning and experience into an orderly and easily followed treatise which begs to be browsed and digested. ANGLING AND CASTING is available for $9.95 from A.S. Barnes & Co., Inc., P.O. Box 421, Cranbury, N.J. 08512. s,

AND THEN . . .

A.W.A.R.E., America's Wildlife Association for Resource Education is the new non-profit foundation which the International Association of Fish and Wildlife Agencies has created to fund the telling of the professional's story of fisheries and wildlife management through the use of television. Donations are being accepted. AWARE, Box 2954, Washington, D.C. 20013.

Personalities

Edited by F. N. Satterlee

GEORGE H. MEREDITH, Game Warden, King William County (Retired)

George Meredith was born to Dr. and Mrs. Meredith in the Lanesville Community of King William County. His father practiced general medicine in that locality and had a surgical practice in Richmond. George really never knew his father as the elder Meredith passed away while George was yet an infant.

His mother sold the home in the Lanesville area and returned with her young son to her childhood home, the 300 acre farm called Aspen Grove located near King William Courthouse. It was there that the youngster grew up, worked on the farm and learned about hunting and fishing and the outdoors from his many relatives.

He worked summers on the farm and, following his graduation from Central High School (now known as King William High), he accepted employment with the Highway Department. In 1943, however, he returned to Aspen Grove and full time farming.

His cousin, A.C. Littlepage, had been a Game Warden since 1923, and when he announced his retirement, George was urged to apply for the position. Encouraged by the support of his neighbors and endorsed by the Board of Supervisors, George applied and was accepted in October 1947. He was assigned to King William County as was the practice in those days.

On December 31, 1977, George retired from the Game Commission and returned to full time farming at Aspen Grove where he has made his home all these years. He feels a deep sense of pride in having been personally involved in helping the sportsmen and women of the Commonwealth to more fully understand their relationship and responsibility regarding the environment and wildlife. He feels also that he has helped to contribute to closer liaison, understanding and cooperation between the sportsmen and the land owners as they all enjoy and utilize the wildlife resource and its habitat.

In retirement, George will not only intensify his farming activities but he also plans to more avidly pursue his life-long interest in history. He is currently president of the King William County Historical Society, a member of both the Virginia Historical Society and National Archives Association and to his everlasting credit is considered to be one of the experts on the history of King William County.

JOHN W. TAYLOR

THE CARDINAL

By JOHN W. TAYLOR

The cardinal must rank as the favorite among American songbirds. Coming readily to window sill feeders and nesting in backyards, gardens and parks, it exposes to everyone its charm and good looks. Even Audubon, who spent a lifetime in pursuit of rare and exotic species in wilderness settings, was inspired to write: "In richness of plumage, elegance of motion and strength of song, the cardinal surpasses all its kindred in the United States." Its popularity is attested to by the legislatures of seven states — Virginia, Kentucky, Illinois, Indiana, North Carolina, Ohio and West Virginia — all of which have selected the cardinal as state bird.

Other aspects of the cardinal's life history are unique as well, though not so well known.

Few realize, for example, the extraordinary and continuing range expansion enjoyed by the cardinal. It is spreading to the north and northwest, nesting regularly now where it was unknown a few decades ago. It is now established in southern Canada, Minnesota and the Dakotas, where its first presence a few years ago was cause for celebration.

The cardinal has traditionally been a bird of the deep south. Thomas Nuttall, writing over 125 years ago, considered the bird an inhabitant of cypress swamps and magnolia gardens. He called it the "Kentucky cardinal", and longed to hear it sing in Boston, where he was director of the Botanic Gardens at Harvard. Now it certainly sings there amid many of the plants so carefully tended by Nuttall himself.

This northward dispersal is even more singular since cardinals are non-migratory. There is no annual movement, north and south, as there is with most of our native birds, and consequently little opportunity to explore new territory. Indeed, most cardinals spend their lifetimes within a few miles of their birthplace.

The cardinal has yet another distinction, of historical importance, that is given little thought today. It was once a highly prized cage bird. In the early part of the last century, large numbers were trapped and exported to England, Spain and other countries. Nuttall records a vessel out of Florida that was partially freighted with caged cardinals priced at ten dollars apiece. Their total value was listed at eighteen thousand dollars. Sold as "Virginia nightingales", they were highly esteemed for their song.

However, stringent federal laws now forbid the sale and shipping of any native songbird. Even their possession is illegal. One would not expect them to sing at all in captivity, much less with any vigor or enthusiasm. For, even in the wild, the cardinal rates high as a songster. Its clear, whistling chant is pleasing and musical, but it lacks the variety and nuance of the canary, or its wild counterpart, the goldfinch. Many other finches (relatives of the cardinal) and, of course, the thrushes and mockingbirds have superior repertoires.

Fewer sounds in nature are, however, more welcome than the song of the cardinal. It is one of the earliest voices of spring, heard even in February when the weather is mild. Indeed, the cardinal is liable to sing in any month of the year, especially in the southern portions of its range. Even the females sing on occasion—a departure from the usual rule.

Cardinals are well distributed throughout Virginia, except in the highest portions of the western mountains. In Shenandoah National Park they occur up to about 3600 feet, but farther west, in the Alleghenies they rarely go above 2500 feet.

Pairs are strongly territorial during the nesting season, and act with belligerence toward others of their kind. But they show a tendency to flock during the colder months when favored feeding areas are discovered. One such gathering consisted of a closely-counted 75 individuals. More often, such winter groups number only a half-dozen or so.

The nesting period is a long one. Nests with eggs have been found in the Richmond area as early as April 8 and as late as September 7. Peak season is late April to mid-July. Two broods are normally raised, but there is evidence that three have been brought off successfully.

KNOW the GREAT OUTDOORS

by Gil Emerson

How about a player like this on your ball team? He has his own mitt and needs no lights to play night games.

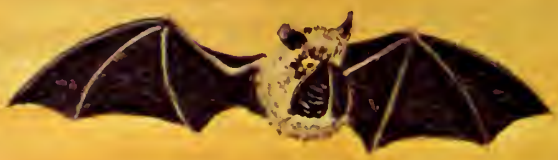
Little Brown Bat

Although several species of bats frequent Virginia, whe see a little acrobat twisting about in the twilight summe it's probably the little brown bat.

He's a fielder with a sonar system. He emits ultra high pitched squeaks (beyond the range of human hearing). These sounds echo back from any object near him. If the echo tells him it is an insect, he homes in on it. . .

scoops it up in his tail membrane just like fielding a baseball.

When one comes flying close overhead, toss a small pebble as close to him as you can. Don't be afraid of hitting him, he can out maneuver your stone. He'll follow it toward the earth but will soon determine that it's not an insect and end the chase.



He sticks his head in his "mitt" and eats the tasty morsel. Then he looks for another.